

Monitoring condition (assumed)

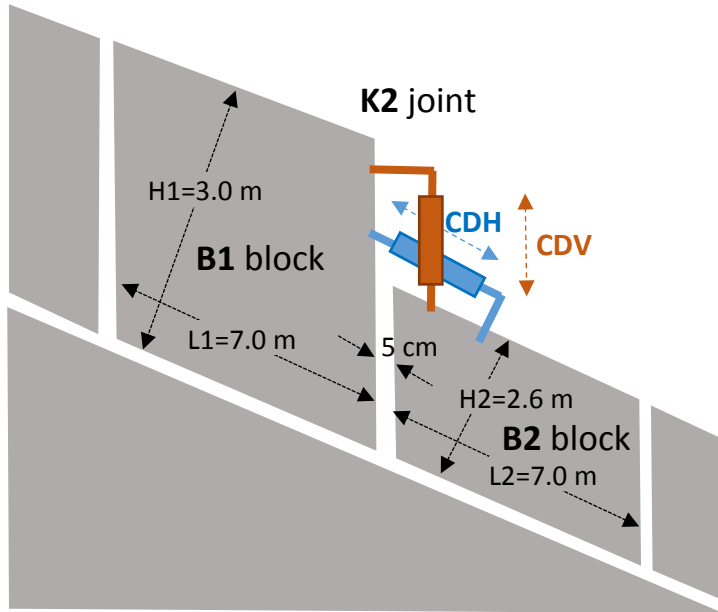


Fig. R1

When heated

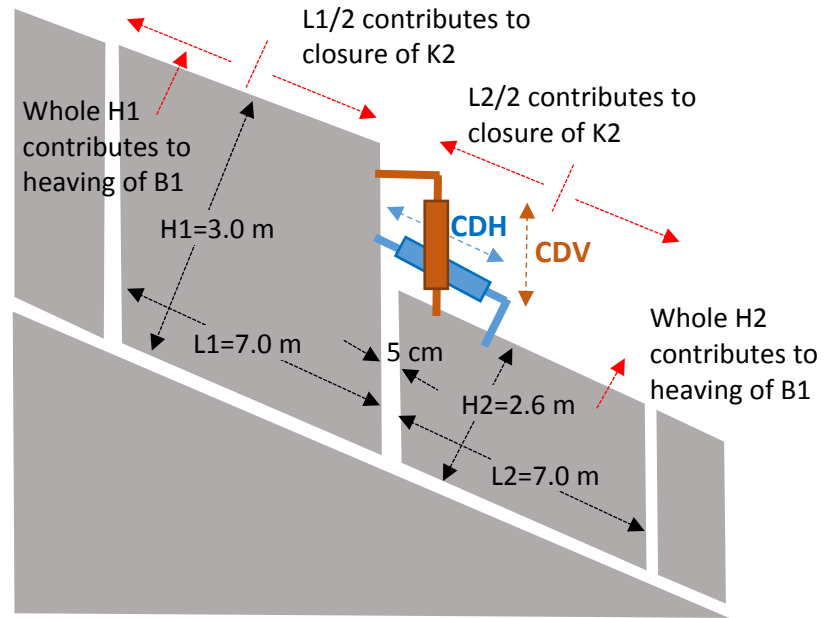


Fig. R2

$$\Delta CDH = -(L1/2 + L2/2) \alpha H \Delta CTT$$

$$\Delta CDV = -(H1 - H2) \alpha V \Delta CTT$$

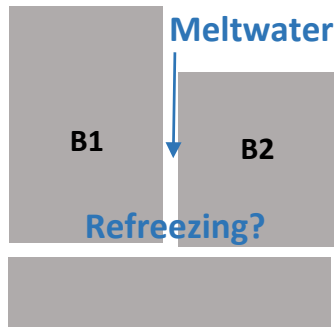
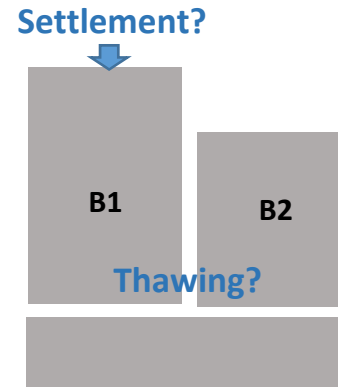
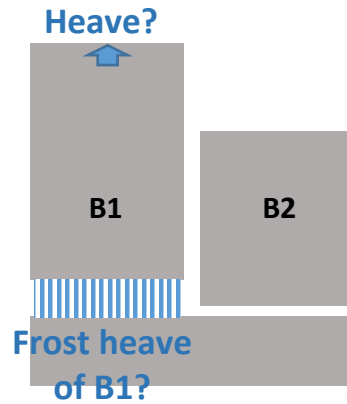


Fig. R3



Why does vertical extension-contraction occur without horizontal movement in spring?